Safe Acid Cleaning Technology Advances

TITLE: Safe Acid Cleaning Technology Advances

ABSTRACT: Acid Salt technology has been developed that provides safer, more environmentally friendly cleaning chemicals. This new technology is used to replace hydrofluoric and other acids in a variety of Pulp & Paper cleaning applications, including, dryer hood cleaning, false ceiling, building siding, and aluminum insulation cleaning.

* "Safe" Defined

What is Safe?

Safe = Not Hazardous

OSHA Hazard Communication Standard (29 CFR 1910.1200)

"Hazardous chemical" means any chemical which is a physical hazard or a health hazard

EPA

- SARA 302 (CERCLA RQ's)
- SARA 311/312 (Tier 2 Annual Reporting)
- SARA 313 (Toxic Chemicals)

Present Day:
Acids used for cleaning in a Pulp & Paper Facility

- Sulfuric Acid
- Hydrochloric Acid
- Hydrofluoric Acid
- Sulfamic Acid
- Phosphoric Acid

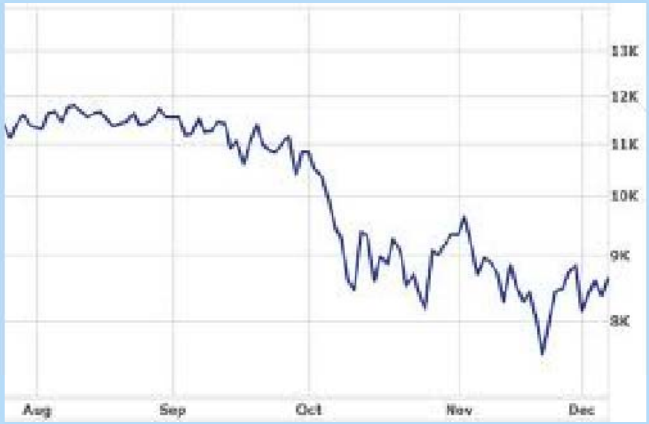
Aluminum Cleaning

Exchanger Cleanings

Scale Removal

pH control

figure 3 - 7082 pH
Analyzer / Controller



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*Hydrofluoric Acid

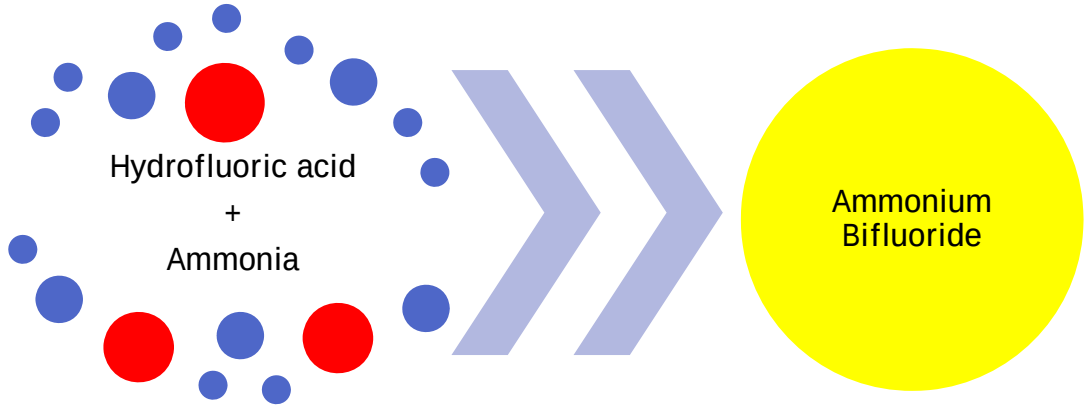
Hydrofluoric acid is a **highly corrosive liquid** and is a **contact poison**.

Owing to its low dissociation constant, HF as a neutral lipid-soluble molecule penetrates tissue more rapidly than typical mineral acids.

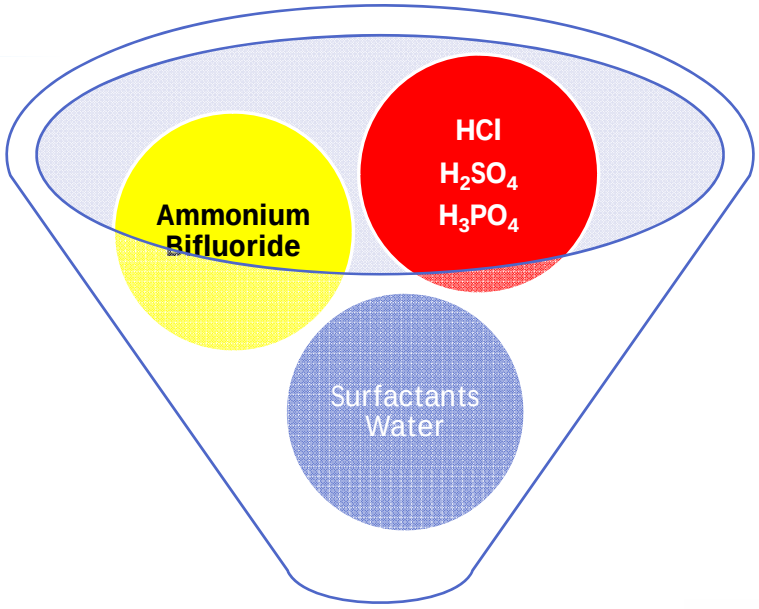
Because of the ability of hydrofluoric acid to penetrate tissue, **poisoning can occur readily through exposure of skin or eyes, or when inhaled or swallowed**. Symptoms of exposure to hydrofluoric acid may not be immediately evident.

HF interferes with nerve function, meaning that burns may not initially be painful. Accidental exposures can go unnoticed, delaying treatment and increasing the extent and seriousness of the injury

Manufacture of Ammonium Bifluoride



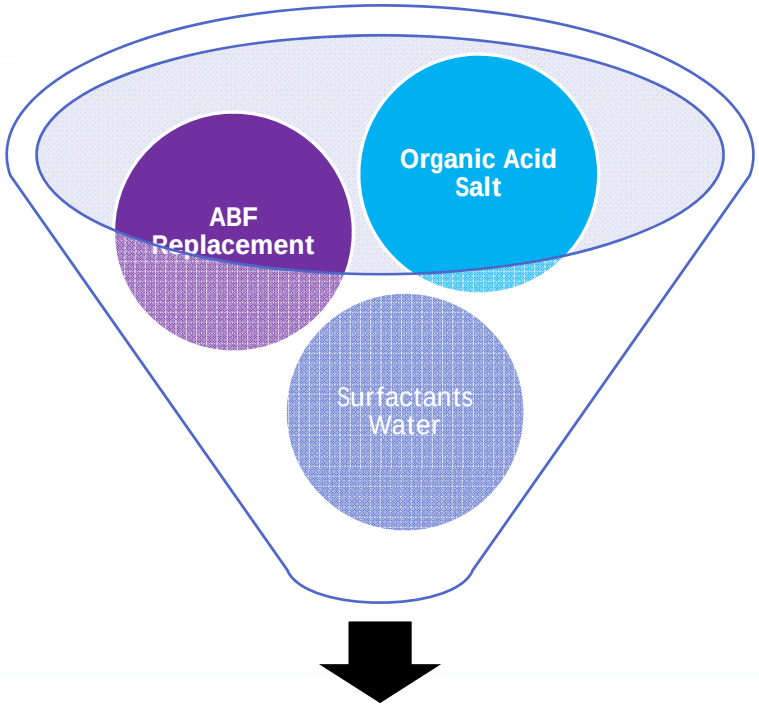
*Manufacture of a typical Aluminum Cleaner



Hydrofluoric Acid

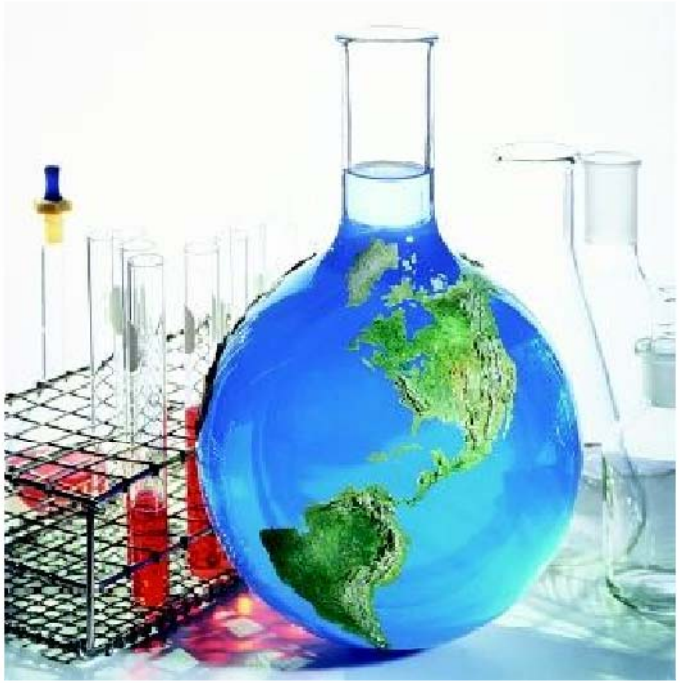
*Ammonium Bifluoride Replacement

*Manufacture of a Safe Aluminum Cleaner



No Hydrofluoric Acid

*Manufacture of a Safe Aluminum Cleaner



OSHA and EPA
"Safe"

*Thank you.